



CITY OF PHILADELPHIA

WATER DEPARTMENT
1160 MUNICIPAL SERVICES BLDG.
PHILADELPHIA, PA. 19107

CARMEN F. GUARINO
Commissioner

May 17, 1974

Mr. Daniel B. Drawbaugh
Division of Water Supply and Sewage
Pa. Department of Environmental Resources
P. O. Box 2351
Harrisburg, PA 17120

Mr. Richard Pastor
Environmental Assessment Branch
Environmental Protection Agency
Region III, Curtis Building
6th and Walnut Streets
Philadelphia, PA 19106

Mr. Richard Hinkle
Pa. Department of Environmental Resources
1875 New Hope Street
Norristown, PA 19401

Gentlemen:

I am pleased to transmit herewith the revised Environmental Assessment Statement for our new Southwest Water Pollution Control Plant.

The references cited at the end of the Assessment Statement have been previously submitted to you with the exception of numbers 6, 7, 8 and 9, which are enclosed. I would ask that these enclosed references be incorporated with those previously submitted.

In preparing this document, we have followed the Federal guidelines for the preparation of Environmental Impact Statements in an effort to anticipate your requirements for completing your environmental review of the proposed project.

It is anticipated that the enclosed document will provide you with sufficient information to complete your environmental review and to issue a Negative Declaration in lieu of an Environmental Impact Statement for the Southwest plant.

If you have any questions concerning the attached assessments, kindly contact me at your earliest convenience.

Very truly yours,

CARMEN F. GUARINO
Water Commissioner

ENVIRONMENTAL ASSESSMENT STATEMENT

FOR THE

CONSTRUCTION OF A NEW 210 MGD

WATER POLLUTION CONTROL PLANT

AT THE

SOUTHWEST WATER POLLUTION CONTROL FACILITY

80TH AND PENROSE AVENUES

PHILADELPHIA, PENNSYLVANIA

A REPORT TO THE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PREPARED BY

CITY OF PHILADELPHIA - WATER DEPARTMENT

CARMEN F. GUARINO

WATER COMMISSIONER

MAY 1974

I. Brief Background

In June - July 1968, the (then) Sanitary Water Board of the Commonwealth of Pennsylvania and the Delaware River Basin Commission issued joint "Orders" to the City of Philadelphia to expand and upgrade its Water Pollution Control Plants. (1)

The Southwest Water Pollution Control Plant, as described herein, is one of three facilities to be expanded and upgraded. This plant is located at 80th and Penrose Avenues (see Figure I) in southwest Philadelphia near Philadelphia International Airport. The plant has been designated as a regional facility (2) and its service area is well delineated both for the immediate future and for the design year of 1990. (3) As such, present and future (1990) wastewater treatment needs of the areas served by the Southwest plant will be satisfied by the construction of this facility.

If, however, increases in the degree of wastewater treatment required are occasioned during the economic life of the plant, it may be necessary to construct additional facilities. This possibility has been provided for in the plant design (3) and also in the advanced acquisition of land for expansion.

II. Summary of Alternative Project Solutions

As a result of the joint orders (1) of DRBC and the Commonwealth of Pennsylvania, the City of Philadelphia had two alternative solutions to consider:

- I. Take no action

II. Build facilities to meet the intent of the orders.

Alternative I was not considered since the Water Department had plans to expand and upgrade the Southwest plant in its Capital Program prior to issuance of orders by DRBC and the Commonwealth.

As a result, Alternative II was selected and after preliminary and conceptual design studies, it was decided to construct a 210 MGD oxygen activated sludge plant with provision for effluent disinfection. This facility, as described in detail in the "Report on Design Studies" (3), will meet the intent of the orders.

Compliance of the project with regional planning is evidenced by its inclusion in the Delaware Valley Regional Planning Commission's "Regional Water Supply and Water Pollution Control Plan" (2). The project is also included in the "Comprehensive Plan of the Delaware River Basin Commission" (4) by virtue of Docket Decision #D-70-53CP. In addition, the project has received a Pennsylvania Department of Environmental Resources Permit (#5172419).

The total capital cost of the project, which will be constructed in two phases, is \$113,314,000 with anticipated annual operating expenses of \$7,613,000.

It is expected that 75 percent of the capital cost incurred will be defrayed by Federal funding under PL 92-500. It is further anticipated that 2 percent per annum of the operating expenses will be defrayed by the Commonwealth of Pennsylvania under Act 339.

III. Environmental Impact of the Proposed Action

The intra-city area to be served by Southwest is a highly

urbanized section of the City comprised of Industrial and Commercial Establishments coupled with high density residential dwelling units.

In addition, the facility currently serves suburban communities under contractual agreements. Further such agreements are anticipated. The suburban areas currently served or anticipated to be served in the future are delineated in the "Report on Design Studies." It should be noted that the DELCORA agreement has the sanction of EPA and that the other agreements cited are legally binding contractual obligations pre-dating the existence of EPA. In fact, the Lower Merion agreements date back as far as 1903.

Table I lists those communities with whom agreements currently exist for provision of service by the Southwest plant.

Table I

<u>Community</u>	<u>Present Quantity (MGD)</u>	<u>Future Quantity (MGD)</u>
Upper Darby	17.00	-----
Springfield	3.65	-----
DELCORA	15.50	50.00
Lower Merion	14.50	-----

The intra-city population served by the project (including industrial equivalents) should not increase to any appreciable degree during the life of the project. In fact, the actual population of Philadelphia decreased during the decade 1960 to 1970. However, there will be cyclical variations in population due to changing

birth and death rates even though the total population remains relatively static over a long period of time.

If major growth occurs as a result of this project, it would have to occur in those service areas contiguous to Philadelphia. Treatment capacity has been provided in the design of Southwest to accommodate suburban growth (3).

While the project per se will not provide directly for suburban growth, the regional nature of the plant, its treatment capacity and the associated economies of scale can serve to discourage proper consideration of suburban wastewater treatment alternatives. The economic soundness of "building an interceptor to Philadelphia" may tend to overshadow environmental considerations and planning, such as low stream flow augmentation and extra-basin exportation of water.

However, several basic restraints are available to dissuade haphazard and unwanted growth patterns.

The City of Philadelphia does not extend its intercepting sewer system beyond the City limits. As such, any suburban community wishing to have the City of Philadelphia satisfy its wastewater treatment and disposal needs must construct an intercepting sewer from its collection system to the City limits at its own expense. It is safe to conclude that the cost of such an interceptor is beyond the community's financial ability to pay. The community must, therefore, seek federal assistance under the provisions of PL 92-500. Before such assistance can be provided several obligations must be satisfied and therein lie the safeguards.

Prior to receipt of federal funds, the applicant must:

1. Satisfy the requirements of the Project Notification Review System (OMB Circular A - 95).
2. Secure a permit from Pa-DER.
3. Receive a favorable Docket Decision from DRBC (where applicable).
4. Prepare an acceptable Environmental Assessment of the project.
5. Receive approval of the DVRPC as to the inclusion of the project in its Regional plan.
6. Receive State certification and priority ranking.

It is inconceivable that in satisfying the obligations cited above, all of the environmental considerations of the project will not be thoroughly identified and addressed.

In addition to these safeguards, no suburban community may connect to the Philadelphia sewer system without negotiating and executing a satisfactory contract with the City. Such agreements place terms and conditions upon the community and limit the amount of flow which may be diverted to the City's system.

This latter safeguard alone negates the possibility of overloading the plant. In addition, such agreements obviously will be consummated prior to application for federal assistance for interceptor construction and consequently serve as a further check.

With the safeguards described above, it can be concluded that any effects on population growth and land development in suburban Philadelphia as a result of constructing the Southwest plant will be minimal and can be controlled effectively through the cooperative

efforts of all concerned agencies.

There will be no displacement of population resulting from the construction of the Southwest plant. The site of the existing Southwest plant will be utilized for the construction of the new facility. The site is presently owned by the City of Philadelphia and encompasses a total of 358 acres (3; from Figures 1-4) of which 40 acres will be occupied by the new plant additions.

As such, it is evident that there is ample room at the existing plant, not only for the proposed new facility, but also any future plant expansion which might be required.

There are two locations within the general vicinity of the Southwest plant which are considered to be of recreational, aesthetic and/or historical value.

The first of these is the Tinicum Wildlife Preserve. Referring to Figure I, the Tinicum Preserve is approximately 2.0 miles west southwest of the west property line of the Southwest plant. As a consequence, any construction activity or the subsequent operation of the plant will in no way harm the Tinicum Wildlife Preserve, since there is a sufficient "buffer zone" between the plant and the Preserve.

As noted on Figure I, Fort Mifflin is located 0.25 miles southeast of the south property line of the Southwest plant. Since all plant construction is well north of the south property line, no damage to Fort Mifflin is envisioned as a result of the project.

However, there is presently located within the Southwest plant boundaries a "Cannonball House" which dates back to the Revolutionary War and which is considered to be of historic value. As part of site preparation for the new Southwest plant, this historic

landmark will be "relocated" as shown on Figure I.

The Water Department has been working closely with the Philadelphia Historical Commission and the Army Corps of Engineers with regard to the relocation work. The Water Department has surveyed the original site of the Cannonball House and made the record available to the Historical Commission for their records. Both the Philadelphia Historical Commission and the City Planning Commission have approved of the relocation (6, 7, 8). It is, therefore, concluded that the relocation of the Cannonball House will serve to preserve its historic value and thus construction of the Southwest plant will not harm any historic property.

As shown on Figure I, the site on which the project will be constructed is isolated from neighborhood residences and as such no residential areas will be defaced as a result of the project.

The plant is bordered on the south and east by the Delaware and Schuylkill Rivers respectively. Philadelphia International Airport is to the west of the plant, while Penrose Avenue borders the facility on the north.

The project will in no way affect ambient air quality either during construction or for the operational life of the Plant. No new cars are expected to enter the area as a result of the project, although with the completion of I-95 additional access to the Airport may increase the volume of vehicular traffic. As discussed earlier, no significant growth in the intra-city service area of the plant is anticipated. Consequently, ambient air quality will not be degraded by a sudden growth in population.

Additionally, the City of Philadelphia Health Department has an Air Management Services Division which is responsible for establishing and enforcing emission control standards. Through the efforts of this agency, ambient air quality in the City of Philadelphia including the service area of the Southwest Plant should be enhanced as air pollution sources are identified and corrective action taken.

Since no residences are immediately adjacent to the Southwest plant, noise during construction will not have any adverse effect on the population in the area. The Standard Contract Requirements of the City of Philadelphia (5) strictly prohibit disturbances to the residents of any area where the City is constructing public works.

When the plant is operational, noise will result primarily from the operation of equipment. However, since this equipment will be housed in structures (3), no noise problems are anticipated as a result of the project. Lack of residences immediately contiguous to the plant serves as a further safeguard against any increased ambient noise levels.

The original orders (1) of DRBC and the Commonwealth specified a required degree of treatment at the Southwest plant. If this degree of treatment is realized by not only the Southwest facility but by all other dischargers in this zone of the Delaware River, improvement in water quality is anticipated. The plant, as described in the "Report on Design Studies" (3), has been designed to meet the intent of the orders and after review of the design by the Pennsylvania Department of Environmental Resources and the DRBC, it has

received their sanction.

Extensive soil studies (9) were made at the Southwest site to insure that: construction on the site was practical, the proper sub-structures would be designed and the geologic formations in the area would not be damaged.

Contamination of surface water during construction by virtue of runoff will be controlled by:

1. Adherence to paragraph 54 (erosion control) of the City of Philadelphia Standard Contract Requirements (5).
2. Adherence to Section 204,a, of the Pennsylvania Clean Streams Act (10).
3. Each contractor will be required to prepare and submit an acceptable Soil Erosion and Sedimentation Control Plan in conformance with the regulations of the Pa. Department of Environmental Resources. This requirement will be made a part of the City's Specifications for each contract (as appropriate) advertised.

Similarly, precautions will be taken to prevent contamination of ground water during construction since the base of some structures will be below the ground water table.

It should be pointed out, however, that the contaminant in either case is sediment as opposed to the more traditional pollutants.

The site will be completely landscaped following construction to prevent soil erosion. The design of the facility (3, 9) is such that contamination of ground water is prevented when the plant is placed in operation.

No adverse effect on wildlife or their natural habitats is envisioned as a result of this project. Construction is land-based and disruption of vegetal cover will occur during construction. However, the site will be fully landscaped following completion of the project. The site does not presently serve as a wildlife habitat and consequently no wildlife displacement, even on a temporary basis, will result from the project.

Completion of the project will provide a degree of wastewater treatment which will meet effluent requirements. The plant's design is predicated upon meeting stream standards which are aimed at the improvement of water quality in the Delaware River. Realization of such standards will enhance the aquatic ecosystems in this stretch of the river.

The design flow of the plant is 210 MGD. The majority of this flow will emanate from within the City while the remainder will be derived from suburban communities. It is important to realize, however, that all of the flow originates within the Delaware River Basin and is returned directly to the Delaware River. Consequently, there is no out-of-basin diversion of water as a result of this project.

It is possible, however, that some suburban communities may have to consider low flow augmentation of some streams as a result of diverting flow to the Southwest plant. This consideration will have to be addressed on an individual basis and is beyond the scope of this assessment. The same safeguards discussed earlier in relation to control of suburban growth can also be applied in this

*Work on
for approval*

House, to identify the impact of the project on suburban growth patterns, to preserve the total environment of the area while the project is under construction and to address the goals and objectives of PL 92-500.

Following construction, the plant site will be completely landscaped. In addition, the Water Department will work closely with the Philadelphia Art Commission to assure that the facility is as aesthetically sound as practicable.

V. Short-Term Environmental Uses vs. Long-Term Productivity

The Philadelphia Water Department owns the site of the proposed project and as such no land acquisition or displacement of persons will result from the construction of the plant.

The plant has been designed as a regional facility and will provide for the wastewater treatment needs of its service area through the design year of 1990. Plant expansion beyond that time has also been considered.

The impact of the project on suburban growth has been addressed and control mechanisms identified.

No long-term risks to health and safety are envisioned as a result of the project.

The plant further addresses the national goals and objectives of water pollution abatement.

VI. Irreversible and Irretrievable Commitments of Resources

There is a commitment of land involved in the project. However

case, and should provide a sufficient mechanism for evaluating alternatives for affected suburban communities.

In addition local, county and regional plans that are properly developed and kept up to date as a viable management tool should also identify areas where low flow augmentation warrants attention.

To date, no local, state or federal agency or any other interested parties have raised any environmental issues which would tend to develop controversy relative to the project. The project has been exposed to public review through the following mechanisms:

1. Project Notification Review System
2. DRBC public hearings, including the hearing at which approval of the project (Docket #D-70-53CP) was granted.
3. Public hearings for the adoption of the DVRPC Regional Water Supply and Wastewater Disposal Plan.

Since no issues were raised at any of these hearings, it is concluded that the project is without environmental controversy.

IV. Adverse Impacts Which Cannot be Avoided

Completion of the construction of the Southwest plant and placing this facility in operation is part of the comprehensive abatement program developed by DRBC which is intended to improve the water quality of the Delaware Estuary. Consequently, it is anticipated that the project will be of benefit to the users of the Delaware River.

Caution, as described previously, has been exercised in the design of the project to preserve the historic value of the Cannonball

this land is the property of the Philadelphia Water Department and had previously been designated for the express purpose of expanding and upgrading the Southwest plant. As such, the commitment of land is, in fact, the result of sound planning and design.

In addition to land, there will be a commitment of power for pumping and operation of the plant when the facility goes on line. Similarly, chemicals will also be used in the treatment process which again represents a commitment of resources.

However, the use of power and chemicals for the operation of Southwest is considered necessary for the proper operation of the plant and to meet the treatment objectives intended in the plant design. The operation of the plant is intended to produce an effluent which will contribute to the enhancement of water quality in the Delaware River.

It can be concluded, therefore, that realization of the improvement in water quality will be an equitable "trade-off" for the resources committed as a result of the project.

VII. Public Participation

It is concluded from previous discussions above, that adequate public participation in the project has been provided for and that no environmental controversies relative to the project have been identified as a result of such participation.

References

1. "Joint Orders of the Delaware River Basin Commission and the Commonwealth of Pennsylvania for Upgrading of Treatment at the Southwest Water Pollution Control Plant", June-July 1968.
2. "The Regional Water Supply and Water Pollution Control Plans", Delaware Valley Regional Planning Commission, Plan Report No. 4 1969.
3. "Report on Design Studies--Southwest Water Pollution Control Plant", prepared for the City of Philadelphia Water Department by Greeley and Hansen, Engineers, October 1972.
4. "Comprehensive Plan of the Delaware River Basin Commission", DRBC 1972.
5. "Standard Contract Requirements for Public Works Contracts", City of Philadelphia Procurement Department, September 1971.
6. Letter from Philadelphia Historical Commission to Water Commissioner, November 15, 1973.
7. Letter from Department of the Army to Water Commissioner, January 11, 1974.
8. Letter from City Planning Commission to Water Commissioner, February 28, 1974.
9. "Geotechnical Investigation Southwest Water Pollution Control Plant", Philadelphia, Pennsylvania, Woodward Gartner and Associates, Inc., December 1972.
10. "The Clean Streams Law of Pennsylvania--Including all Amendments to the End of the Legislative Session of 1970", Commonwealth of Pennsylvania Department of Environmental Resources, 1970